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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/092,139	03/06/2002	William D. Tandy	4333.1US (99-0257.1)	9714
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EXAMINER CHANG, VICTOR S				
ART UNIT 1794		PAPER NUMBER		
NOTIFICATION DATE 05/19/2008		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USPTOMail@traskbritt.com

Office Action Summary

Application No.

10/092,139

Applicant(s)

TANDY ET AL.

Examiner

Victor S. Chang

Art Unit

1794

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3, 4, 6, 8, 9, 11, 12, 14, 16, 17, 19, 20, 22 and 24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 4, 6, 8, 9, 11, 12, 14, 16, 17, 19, 20, 22 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsman's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 4/30/08
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Introduction

1. Applicants' amendments and remarks filed on 4/30/2008 have been entered. Claims 1, 9 and 17 have been amended. Claims 1, 3, 4, 6, 8, 9, 11, 12, 14, 16, 17, 19, 20, 22 and 24 are active.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. In response to the amendments, the Office action has been updated as set forth below. Rejections not maintained are withdrawn.

Claim Rejections - 35 USC § 112

4. Claims 1, 3, 4, 6, 8, 9, 11, 12, 14, 16, 17, 19, 20, 22 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In independent claims 1, 9 and 17, the phrases "first outermost adhesive layer ... properties of a first type" and "second adhesive layer ... second properties different than the properties of the first type" are vague and indefinite, because it is unclear what are the scopes of the "properties of a first type" and "second properties different than the properties of the first type". The addition of the word "type" to an otherwise definite expression extends the scope of the expression so as to render it indefinite. *Ex parte Copenhaver*, 109 USPQ 118 (Bd. App. 1955).

In independent claims 1, 9 and 17, the newly added limitation “the electromagnetic radiation-curable components having properties of a first type comprising a first outermost adhesive layer” further renders the term “a first type” vague and indefinite, because now both claimed elements of “the first outermost adhesive layer” and “the electromagnetic radiation-curable components” are recited as having properties of “a first type”. It is unclear how a structural element “layer” and a composition element “component” have the same properties of “a first type”. Clarification is required in the next reply.

Rejections Based on Prior Art

5. Claims 1, 3, 4, 6, 8, 9, 11, 12, 14, 16, 17, 19, 20, 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weng et al. [US 5972234] in view of Ishiwata et al. [US 5300172].

Weng’s invention relates to a tape for marking a wafer (semiconductor device). A high-intensity energy beam is used to create a cavity or a mark through the tape. The tape is laminated to a top surface of the semiconductor substrate and exposed to an etchant to form a mark in the substrate [abstract]. Any suitable tape of polymeric based material, which can be easily patterned by high-intensity energy beams such as ultraviolet light or laser, can be used [col. 4, lines 27-33]. The marking tape adheres to a substrate to be marked [col. 2, line 64]. A release layer (flexible film) may be provided to cover the adhesive layer for protection during the laser marking process [col. 4, line 64 through col. 5, line 2]. The release layer may be formed of any suitable material such as polypropylene or PET [col. 5, lines 1-2].

For claim 1, since Weng teaches that the marking tape adheres to the semiconductor substrate to be marked, it is an adhesive tape. Weng lacks teachings that the marking tape comprises 1) a material having a thermal expansion coefficient substantially similar to the semiconductor device, 2) two different adhesive layers, and 3) the first outermost adhesive layer is radiation curable and bonded to at least a portion of a semiconductor device. However, regarding 1), since Weng teaches a marking tape for the same end use as the instant invention, selecting a workable material having a similar thermal expansion coefficient substantially similar to the semiconductor device is deemed to be an obvious routine optimization, dictated by the same end use requirements, such as maintaining adherence or preventing delamination during processing. Regarding 2), in view of the amended Fig. 5, and applicants' statement that

"[0041] and [0049] clearly supports the claim limitation of presently amended independent claim 1 calling for "first mixture layer is formed of a type so as to cure and bond to a surface of a bare semiconductor die 20 upon exposure to a radiation source, whereupon it is laser markable" and "[u]pon exposure to radiation, the second adhesive layer can either cure onto the first mixture layer or, alternatively, lose its adhesive properties and facilitate peeling of carrier tape 4 from a wafer or surface of a bare semiconductor die 20"" [Remarks page 10],

the terms "first type" and "second type" are interpreted as referring to their respective outer surface properties which are inherently present when the outer surfaces are in contact with different materials of semiconductor substrate and carrier tape. Nothing in [0041] or [0049] provide any distinction in chemistry between the two layers. The examiner takes the position that since Weng's single-layer adhesive provides the same structural features at its outer surfaces and the claim language lacks any distinction in chemistry between the two adhesive layers, Weng's single layered adhesive marking tape reads on both adhesive layers of the claimed invention, i.e., the layer regions at opposite surfaces read on the claimed layers respectively.

Further, since a single adhesive layer read on both layers, the limitation “the second adhesive layer can ... cure onto the first mixture layer” is read upon by Weng’s single integral adhesive layer. Regarding 3), Ishiwata’s invention relates to a surface-protection method during etching. Through the use of a radiation-curable adhesive tape at the time of etching, a tape is stuck (bonded) onto an adherend wafer (semiconductor device), then the radiation-curable adhesive layer is irradiation cured before the etching treatment, the cured adhesive has much enhanced etching resistance [col. 2, lines 49-57]. It would have been obvious to one of ordinary skill in the art to modify Weng’s adhesive layer with Ishiwata’s radiation-curable adhesive layer, motivated by the desire to obtain an enhanced etching resistance. Finally, since Weng teaches the same polypropylene or PET release layer for protection during the laser marking process, a workable peeling property is deemed to be obviously provided by practicing the invention of prior art.

For claim 3, since the surface of the semiconductor is not a structural element of instantly claimed laser-markable tape of claim 1, whether the surface of the semiconductor bears grinding marks or not bears no weight to the patentability. Further, even if it is considered, since Weng expressly teaches that the substrates includes a silicon wafer and any suitable electronic substrate materials that is utilized in the fabrication of electronic devices [col. 4, lines 18-20], Weng’s teachings encompass the claimed limitation as well.

For claim 4, since Ishiwata’s radiation-cured adhesive layer provides an enhanced etching resistance, it is interpreted as providing a permanent adhesion in the marking process of the semiconductor device.

For claim 6, since the prior art teaches the same use (marking a wafer or semiconductor device), the “homogeneous surface” of the adhesive layer outer surface is deemed to be obviously provided by practicing the same invention of the prior art.

For claim 8, Weng's polypropylene release layer is inherently translucent.

For claims 9, 11, 12, 14, 16, 17, 19, 20, 22 and 24, since they are of the same scope as claims 1, 3, 4, 6 and 8, they are also rejected for the same reasons.

Response to Arguments

6. Applicants argue at Remarks page 8 that

“Applicants assert that the word “property” has the ordinary, simple, customary meaning of the word “property” as set forth in Webster's Ninth New Collegiate Dictionary, page 943, and as used in the Applicants specification, numbered paragraphs [0015] through [0018] and [0028] through [0054]. A copy of the ordinary, simple, customary meaning of the word “property” as set forth on page 943 of Webster's Ninth New Collegiate Dictionary is attached to this amendment as Attachment A for the Examiner's reference.”

However, applicants have misinterpreted the 112, 2nd paragraph rejection is directed to the word “property”. It is unclear what are the scopes of the “properties of a first type” and “second properties different than the properties of the first type”. The addition of the word “type” to an otherwise definite expression extends the scope of the expression so as to render it indefinite. *Ex parte Copenhaver*, 109 USPQ 118 (Bd. App. 1955).

Applicants argue at page 12 that

“Weng et al. does not teach or suggest forming a mark on a semiconductor surface using an ultraviolet light or laser to cause adhesive of the tape to cure and bond to the semiconductor surface, forming a mark thereon as only an etching process forms a mark on the semiconductor surface.

The Ishiwata et al. reference teaches or suggests the use of a radiation curable adhesive tape on a wafer to form a three dimensional network.

Applicants assert that any combination of the Weng et al. reference in view of the Ishiwata et al. reference fails to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed inventions of presently amended, independent claims 1, 9, and 17 because cited prior art fails to teach or suggest all the claim limitations and the suggestion to make the claimed combination and the reasonable expectation of success found solely in Applicants' disclosure, not the cited prior art."

However, applicants have recognized that Weng teaches a mark formed by etching process [Remarks page 11] and Ishiwata's invention relates to a surface-protection method during etching. Through the use of a radiation-curable adhesive tape at the time of etching, a tape is stuck (bonded) onto an adherend wafer (semiconductor device), then the radiation-curable adhesive layer is irradiation cured before the etching treatment, the cured adhesive has much enhanced etching resistance [col. 2, lines 49-57]. It would have been obvious to one of ordinary skill in the art to modify Weng's adhesive layer with Ishiwata's radiation-curable adhesive layer, motivated by the desire to obtain an enhanced etching resistance. More particularly, since they are of the same field of endeavor, combining their teachings is proper, with a reasonable expectation of success at the time the invention was made.

Applicants argue at page 13 that

"there is no showing in the cited prior art in the application to support any such statements by one of ordinary skill in the art under 35 U.S.C. § 103 to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 as Applicants assert that such statements are "mere conclusory statements without some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness."

However, since Weng teaches a marking tape for the same end use as the instant invention, selecting a workable material having a similar thermal expansion coefficient substantially similar to the semiconductor device is deemed to be an obvious routine optimization, dictated by the same end use requirements, such as maintaining adherence or preventing delamination during processing.

Applicants argue at page 13 that

“Applicants can find no basis in 35 U.S.C. or 37 CFR or the MPEP for any requirement of using chemical equations and structure solely to distinguish over cited prior art.”

However, nowhere has the examiner made a 112 rejection over lacking chemical compositions for the first and second layers. The examiner merely states that the recited structural feature fails to exclude Weng’s single layer from reading on both layers, including their outer surface properties.

Applicants argue at page 14 that

“claims are rejected based solely on hindsight based solely on Applicants disclosure which is impermissible.”

In response to applicant’s argument that the examiner’s conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant’s disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Conclusion

7. Applicant’s amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S. Chang whose telephone number is 571-272-1474. The examiner can normally be reached on 7:00 am - 5:00 pm, Tuesday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Victor S Chang/
Primary Examiner, Art Unit 1794